

SEQUENCE LISTING

<110> Biogen, Inc.
 Burkly, Linda
 Wang, Li Chun

<120> METHODS OF MODULATING LIPID METABOLISM AND STORAGE

<130> A069PCT

<140> PCT/US00/05662

<141> 2000-03-03

<150> 60/122,640

<151> 1999-03-03

<150> 60/124,446

<151> 1999-03-15

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<170> PatentIn Ver. 2.1

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<212> DNA

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Cys Ala Leu Leu Val Ser Ser Gly Leu Thr Cys Gly Pro Gly Arg Gly
 20 25 30

att gga aaa agg agg cac ccc aaa aag ctg acc ccg tta gcc tat aag 144

Ile Gly Lys Arg Arg His Pro Lys Lys Leu Thr Pro Leu Ala Tyr Lys
 35 40 45

cag ttt att ccc aat gtg gca gag aag acc cta ggg gcc agt gga aga 192

Gln Phe Ile Pro Asn Val Ala Glu Lys Thr Leu Gly Ala Ser Gly Arg

a069seq

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cca aat tac aac cct gac att att ttt aag gat gaa gag aac acg gga					288
Pro Asn Tyr Asn Pro Asp Ile Ile Phe Lys Asp Glu Glu Asn Thr Gly		85	90	95	
gct gac aga ctg atg act cag cgc tgc aag gac aag ctg aat gcc ctg					336
Ala Asp Arg Leu Met Thr Gln Arg Cys Lys Asp Lys Leu Asn Ala Leu		100	105	110	
gcg atc tcg gtg atg aac cag tgg ccc ggg gtg aag ctg cgg gtg acc					384
Ala Ile Ser Val Met Asn Gln Trp Pro Gly Val Lys Leu Arg Val Thr		115	120	125	
gag ggc tgg gac gag gat ggc cat cac tcc gag gaa tcg ctg cac tac					432
Glu Gly Trp Asp Glu Asp Gly His His Ser Glu Glu Ser Leu His Tyr	130	135	140		
gag ggt cgc gcc gtg gac atc acc acg tcg gat cgg gac cgc agc aag					480
Glu Gly Arg Ala Val Asp Ile Thr Thr Ser Asp Arg Asp Arg Ser Lys	145	150	155	160	
tac gga atg ctg gcc cgc ctc gcc gtc gag gcc ggc ttc gac tgg gtc					528
Tyr Gly Met Leu Ala Arg Leu Ala Val Glu Ala Gly Phe Asp Trp Val		165	170	175	
tac tac gag tcc aag gcg cac atc cac tgc tcc gtc aaa gca gaa aac					576
Tyr Tyr Glu Ser Lys Ala His Ile His Cys Ser Val Lys Ala Glu Asn		180	185	190	
tca gtg gca gcg aaa tca gga ggc tgc ttc cct ggc tca gcc aca gtg					624
Ser Val Ala Ala Lys Ser Gly Gly Cys Phe Pro Gly Ser Ala Thr Val		195	200	205	
cac ctg gag cat gga ggc acc aag ctg gtg aag gac ctg agc cct ggg					672
His Leu Glu His Gly Gly Thr Lys Leu Val Lys Asp Leu Ser Pro Gly	210	215	220		

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225 230 235 240	
ttc ctc acc ttc ctc gac cgg atg gac agc tcc cga aag ctc ttc tac	768
Phe Leu Thr Phe Leu Asp Arg Met Asp Ser Ser Arg Lys Leu Phe Tyr	
245 250 255	
gtc atc gag acg cgg cag ccc cgg gcc cgg ctg cta ctg acg gcg gcc	816
Val Ile Glu Thr Arg Gln Pro Arg Ala Arg Leu Leu Leu Thr Ala Ala	
260 265 270	
cac ctg ctc ttt gtg gcc ccc cag cac aac cag tcg gag gcc aca ggg	864
His Leu Leu Phe Val Ala Pro Gln His Asn Gln Ser Glu Ala Thr Gly	
275 280 285	
tcc acc agt ggc cag gcg ctc ttc gcc agc aac gtg aag cct ggc caa	912
Ser Thr Ser Gly Gln Ala Leu Phe Ala Ser Asn Val Lys Pro Gly Gln	
290 295 300	
cgt gtc tat gtg ctg ggc gag ggc ggg cag cag ctg ctg ccg gcg tct	960
Arg Val Tyr Val Leu Gly Glu Gly Gly Gln Gln Leu Leu Pro Ala Ser	
305 310 315 320	
gtc cac agc gtc tca ttg cgg gag gag gcg tcc gga gcc tac gcc cca	1008
Val His Ser Val Ser Leu Arg Glu Glu Ala Ser Gly Ala Tyr Ala Pro	
325 330 335	
ctc acc gcc cag ggc acc atc ctc atc aac cgg gtg ttg gcc tcc tgc	1056
Leu Thr Ala Gln Gly Thr Ile Leu Ile Asn Arg Val Leu Ala Ser Cys	
340 345 350	
tac gcc gtc atc gag gag cac agt tgg gcc cat tgg gcc ttc gca cca	1104
Tyr Ala Val Ile Glu Glu His Ser Trp Ala His Trp Ala Phe Ala Pro	
355 360 365	
ttc cgc ttg gct cag ggg ctg ctg gcc gcc ctc tgc cca gat ggg gcc	1152
Phe Arg Leu Ala Gln Gly Leu Leu Ala Ala Leu Cys Pro Asp Gly Ala	
370 375 380	

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Leu Leu Tyr Arg Ile Gly Ser Trp Val Leu Asp Gly Asp Ala Leu His
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  1                               5                               10                               15

gca cta tct gcc cag agc tgc ggg ccg ggc cga gga ccg gtt ggc cgg      96
Ala Leu Ser Ala Gln Ser Cys Gly Pro Gly Arg Gly Pro Val Gly Arg
                               20                               25                               30

cgg cgt tat gtg cgc aag caa ctt gtg cct ctg cta tac aag cag ttt      144
Arg Arg Tyr Val Arg Lys Gln Leu Val Pro Leu Leu Tyr Lys Gln Phe
                               35                               40                               45

gtg ccc agt atg ccc gag cgg acc ctg ggc gcg agt ggg cca gcg gag      192
Val Pro Ser Met Pro Glu Arg Thr Leu Gly Ala Ser Gly Pro Ala Glu
                               50                               55                               60

ggg agg gta aca agg ggg tcg gag cgc ttc cgg gac ctc gta ccc aac      240
Gly Arg Val Thr Arg Gly Ser Glu Arg Phe Arg Asp Leu Val Pro Asn
  65                               70                               75                               80

tac aac ccc gac ata atc ttc aag gat gag gag aac agc ggc gca gac      288

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Arg	Leu	Met	Thr	Glu	Arg	Cys	Lys	Glu	Arg	Val	Asn	Ala	Leu	Ala	Ile	
			100					105					110			
gc	gt	at	gc	atg	tgg	ccc	gga	gta	cgc	cta	cgt	gtg	act	gaa	ggc	384
Ala	Val	Met	Asn	Met	Trp	Pro	Gly	Val	Arg	Leu	Arg	Val	Thr	Glu	Gly	
		115					120					125				
tgg	gac	gag	gac	ggc	cac	cac	gca	cag	gat	tca	ctc	cac	tac	gaa	ggc	432
Trp	Asp	Glu	Asp	Gly	His	His	Ala	Gln	Asp	Ser	Leu	His	Tyr	Glu	Gly	
	130					135					140					
cgt	gcc	ttg	gac	atc	acc	acg	tct	gac	cgt	gac	cgt	aat	aag	tat	ggt	480
Arg	Ala	Leu	Asp	Ile	Thr	Thr	Ser	Asp	Arg	Asp	Arg	Asn	Lys	Tyr	Gly	
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Glu	Ser	Arg	Asn	His	Ile	His	Val	Ser	Val	Lys	Ala	Asp	Asn	Ser	Leu	
			180					185					190			
gcg	gtc	cga	gcc	gga	ggc	tgc	ttt	ccg	gga	aat	gcc	acg	gtg	cgc	ttg	624
Ala	Val	Arg	Ala	Gly	Gly	Cys	Phe	Pro	Gly	Asn	Ala	Thr	Val	Arg	Leu	
		195					200					205				
cgg	agc	ggc	gaa	cgg	aag	ggg	ctg	agg	gaa	cta	cat	cgt	ggt	gac	tgg	672
Arg	Ser	Gly	Glu	Arg	Lys	Gly	Leu	Arg	Glu	Leu	His	Arg	Gly	Asp	Trp	
	210					215					220					
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Val	Leu	Ala	Ala	Asp	Ala	Ala	Gly	Arg	Val	Val	Pro	Thr	Pro	Val	Leu	
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gag acc gag cgg cct ccg cgc aaa ctg ttg ctc aca ccc tgg cat ctg      816

Glu Thr Glu Arg Pro Pro Arg Lys Leu Leu Leu Thr Pro Trp His Leu
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gtg ttc gct gct cgc ggg cca gcg cct gct cca ggt gac ttt gca ccg      864

Val Phe Ala Ala Arg Gly Pro Ala Pro Ala Pro Gly Asp Phe Ala Pro
                                275                                280                                285

gtg ttc gcg cgc cgc tta cgt gct ggc gac tcg gtg ctg gct ccc ggc      912

Val Phe Ala Arg Arg Leu Arg Ala Gly Asp Ser Val Leu Ala Pro Gly
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ggg gac gcg ctc cag ccg gcg cgc gta gcc cgc gtg gcg cgc gag gaa      960

Gly Asp Ala Leu Gln Pro Ala Arg Val Ala Arg Val Ala Arg Glu Glu
305                                310                                315                                320

gcc gtg ggc gtg ttc gca ccg ctc act gcg cac ggg acg ctg ctg gtc      1008

Ala Val Gly Val Phe Ala Pro Leu Thr Ala His Gly Thr Leu Leu Val
                                325                                330                                335

aac gac gtc ctc gcc tcc tgc tac gcg gtt cta gag agt cac cag tgg      1056

Asn Asp Val Leu Ala Ser Cys Tyr Ala Val Leu Glu Ser His Gln Trp
                                340                                345                                350

gcc cac cgc gcc ttc gcc cct ttg cgg ctg ctg cac gcg ctc ggg gct      1104

Ala His Arg Ala Phe Ala Pro Leu Arg Leu Leu His Ala Leu Gly Ala
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ctg ctc cct ggg ggt gca gtc cag ccg act ggc atg cat tgg tac tct      1152

Leu Leu Pro Gly Gly Ala Val Gln Pro Thr Gly Met His Trp Tyr Ser
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  1           5           10           15

ctg ctg ctg ctt ctg gtg ccg gcg gcg cgg ggc tgc ggg ccg ggc cgg      96
Leu Leu Leu Leu Leu Val Pro Ala Ala Arg Gly Cys Gly Pro Gly Arg
      20           25           30

gtg gtg ggc agc cgc cgg agg ccg cct cgc aag ctc gtg cct ctt gcc     144
Val Val Gly Ser Arg Arg Arg Pro Pro Arg Lys Leu Val Pro Leu Ala
      35           40           45

tac aag cag ttc agc ccc aac gtg ccg gag aag acc ctg ggc gcc agc     192
Tyr Lys Gln Phe Ser Pro Asn Val Pro Glu Lys Thr Leu Gly Ala Ser
      50           55           60

ggg cgc tac gaa ggc aag atc gcg cgc agc tct gag cgc ttc aaa gag     240
Gly Arg Tyr Glu Gly Lys Ile Ala Arg Ser Ser Glu Arg Phe Lys Glu
      65           70           75

ctc acc ccc aac tac aat ccc gac atc atc ttc aag gac gag gag aac     288
Leu Thr Pro Asn Tyr Asn Pro Asp Ile Ile Phe Lys Asp Glu Glu Asn
      85           90           95

acg ggt gcc gac cgc ctc atg acc cag cgc tgc aag gac cgt ctg aac     336
Thr Gly Ala Asp Arg Leu Met Thr Gln Arg Cys Lys Asp Arg Leu Asn
      100          105          110

tca ctg gcc atc tct gtc atg aac cag tgg cct ggt gtg aaa ctg cgg     384
Ser Leu Ala Ile Ser Val Met Asn Gln Trp Pro Gly Val Lys Leu Arg
      115          120          125

gtg acc gaa ggc cgg gat gaa gat ggc cat cac tca gag gag tct tta     432
Val Thr Glu Gly Arg Asp Glu Asp Gly His His Ser Glu Glu Ser Leu
      130          135          140

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cac tat gag ggc cgc gcg gtg gat atc acc acc tca gac cgt gac cga	480
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145 150 155 160	
aat aag tat gga ctg ctg gcg cgc tta gca gtg gag gcc ggc ttc gac	528
Asn Lys Tyr Gly Leu Leu Ala Arg Leu Ala Val Glu Ala Gly Phe Asp	
165 170 175	
tgg gtg tat tac gag tcc aag gcc cac gtg cat tgc tct gtc aag tct	576
Trp Val Tyr Tyr Glu Ser Lys Ala His Val His Cys Ser Val Lys Ser	
180 185 190	
gag cat tcg gcc gct gcc aag aca ggt ggc tgc ttt cct gcc gga gcc	624
Glu His Ser Ala Ala Ala Lys Thr Gly Gly Cys Phe Pro Ala Gly Ala	
195 200 205	
cag gtg cgc cta gag aac ggg gag cgt gtg gcc ctg tca gct gta aag	672
Gln Val Arg Leu Glu Asn Gly Glu Arg Val Ala Leu Ser Ala Val Lys	
210 215 220	
cca gga gac cgg gtg ctg gcc atg ggg gag gat ggg acc ccc acc ttc	720
Pro Gly Asp Arg Val Leu Ala Met Gly Glu Asp Gly Thr Pro Thr Phe	
225 230 235 240	
agt gat gtg ctt att ttc ctg gac cgc gag cca aac cgg ctg aga gct	768
Ser Asp Val Leu Ile Phe Leu Asp Arg Glu Pro Asn Arg Leu Arg Ala	
245 250 255	
ttc cag gtc atc gag act cag gat cct ccg cgt cgg ctg gcg ctc acg	816
Phe Gln Val Ile Glu Thr Gln Asp Pro Pro Arg Arg Leu Ala Leu Thr	
260 265 270	
cct gcc cac ctg ctc ttc att gcg gac aat cat aca gaa cca gca gcc	864
Pro Ala His Leu Leu Phe Ile Ala Asp Asn His Thr Glu Pro Ala Ala	
275 280 285	
cac ttc cgg gcc aca ttt gcc agc cat gtg caa cca ggc caa tat gtg	912
His Phe Arg Ala Thr Phe Ala Ser His Val Gln Pro Gly Gln Tyr Val	
290 295 300	

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Leu Val Ser Gly Val Pro Gly Leu Gln Pro Ala Arg Val Ala Ala Val
305                      310                      315                      320

tcc acc cac gtg gcc ctt ggg tcc tat gct cct ctc aca agg cat ggg      1008
Ser Thr His Val Ala Leu Gly Ser Tyr Ala Pro Leu Thr Arg His Gly
                      325                      330                      335

aca ctt gtg gtg gag gat gtg gtg gcc tcc tgc ttt gca gct gtg gct      1056
Thr Leu Val Val Glu Asp Val Val Ala Ser Cys Phe Ala Ala Val Ala
                      340                      345                      350

gac cac cat ctg gct cag ttg gcc ttc tgg ccc ctg cga ctg ttt ccc      1104
Asp His His Leu Ala Gln Leu Ala Phe Trp Pro Leu Arg Leu Phe Pro
                      355                      360                      365

agt ttg gca tgg ggc agc tgg acc cca agt gag ggt gtt cac tcc tac      1152
Ser Leu Ala Trp Gly Ser Trp Thr Pro Ser Glu Gly Val His Ser Tyr
                      370                      375                      380

cct cag atg ctc tac cgc ctg ggg cgt ctc ttg cta gaa gag agc acc      1200
Pro Gln Met Leu Tyr Arg Leu Gly Arg Leu Leu Leu Glu Glu Ser Thr
385                      390                      395                      400

ttc cat cca ctg ggc atg tct ggg gca gga agc tgaagggact ctaaccactg 1253
Phe His Pro Leu Gly Met Ser Gly Ala Gly Ser
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ccctcctgga actgctgtgc gtggatcc                                     1281

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Leu  Leu  Val  Cys  Pro  Gly  Leu  Ala  Cys  Gly  Pro  Gly  Arg  Gly  Phe  Gly
          20          25          30
aag  agg  cgg  cac  ccc  aaa  aag  ctg  acc  cct  tta  gcc  tac  aag  cag  ttt    144
Lys  Arg  Arg  His  Pro  Lys  Lys  Leu  Thr  Pro  Leu  Ala  Tyr  Lys  Gln  Phe
          35          40          45
att  ccc  aac  gta  gcc  gag  aag  acc  cta  ggg  gcc  agc  ggc  aga  tat  gaa    192
Ile  Pro  Asn  Val  Ala  Glu  Lys  Thr  Leu  Gly  Ala  Ser  Gly  Arg  Tyr  Glu
      50          55          60
ggg  aag  atc  aca  aga  aac  tcc  gaa  cga  ttt  aag  gaa  ctc  acc  ccc  aat    240
Gly  Lys  Ile  Thr  Arg  Asn  Ser  Glu  Arg  Phe  Lys  Glu  Leu  Thr  Pro  Asn
  65          70          75          80
tac  aac  ccc  gac  atc  ata  ttt  aag  gat  gag  gaa  aac  acg  gga  gca  gac    288
Tyr  Asn  Pro  Asp  Ile  Ile  Phe  Lys  Asp  Glu  Glu  Asn  Thr  Gly  Ala  Asp
          85          90          95
cgg  ctg  atg  act  cag  agg  tgc  aaa  gac  aag  tta  aat  gcc  ttg  gcc  atc    336
Arg  Leu  Met  Thr  Gln  Arg  Cys  Lys  Asp  Lys  Leu  Asn  Ala  Leu  Ala  Ile
          100          105          110
tct  gtg  atg  aac  cag  tgg  cct  gga  gtg  agg  ctg  cga  gtg  acc  gag  ggc    384
Ser  Val  Met  Asn  Gln  Trp  Pro  Gly  Val  Arg  Leu  Arg  Val  Thr  Glu  Gly
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tgg  gat  gag  gac  ggc  cat  cat  tca  gag  gag  tct  cta  cac  tat  gag  ggt    432
Trp  Asp  Glu  Asp  Gly  His  His  Ser  Glu  Glu  Ser  Leu  His  Tyr  Glu  Gly
  130          135          140
cga  gca  gtg  gac  atc  acc  acg  tcc  gac  cgg  gac  cgc  agc  aag  tac  ggc    480
Arg  Ala  Val  Asp  Ile  Thr  Thr  Ser  Asp  Arg  Asp  Arg  Ser  Lys  Tyr  Gly
  145          150          155          160
atg  ctg  gct  cgc  ctg  gct  gtg  gaa  gca  ggt  ttc  gac  tgg  gtc  tac  tat    528
Met  Leu  Ala  Arg  Leu  Ala  Val  Glu  Ala  Gly  Phe  Asp  Trp  Val  Tyr  Tyr

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165										170			175							
gaa tcc aaa gct cac atc cac tgt tct gtg aaa gca gag aac tcc gtg																		576		
Glu	Ser	Lys	Ala	His	Ile	His	Cys	Ser	Val	Lys	Ala	Glu	Asn	Ser	Val					
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gcg gcc aaa tcc ggc ggc tgt ttc ccg gga tcc gcc acc gtg cac ctg																		624		
Ala	Ala	Lys	Ser	Gly	Gly	Cys	Phe	Pro	Gly	Ser	Ala	Thr	Val	His	Leu					
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gag cag ggc ggc acc aag ctg gtg aag gac tta cgt ccc gga gac cgc																		672		
Glu	Gln	Gly	Gly	Thr	Lys	Leu	Val	Lys	Asp	Leu	Arg	Pro	Gly	Asp	Arg					
		210							215				220							
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Val	Leu	Ala	Ala	Asp	Asp	Gln	Gly	Arg	Leu	Leu	Tyr	Ser	Asp	Phe	Leu					
		225							230				235							
acc ttc ctg gac cgc gac gaa ggc gcc aag aag gtc ttc tac gtg atc																		768		
Thr	Phe	Leu	Asp	Arg	Asp	Glu	Gly	Ala	Lys	Lys	Val	Phe	Tyr	Val	Ile					
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gag acg ctg gag ccg cgc gag cgc ctg ctg ctc acc gcc gcg cac ctg																		816		
Glu	Thr	Leu	Glu	Pro	Arg	Glu	Arg	Leu	Leu	Leu	Thr	Ala	Ala	His	Leu					
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ctc ttc gtg gcg ccg cac aac gac tcg ggg ccc acg ccc ggg cca agc																		864		
Leu	Phe	Val	Ala	Pro	His	Asn	Asp	Ser	Gly	Pro	Thr	Pro	Gly	Pro	Ser					
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Ala	Leu	Phe	Ala	Ser	Arg	Val	Arg	Pro	Gly	Gln	Arg	Val	Tyr	Val	Val					
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gct gaa cgc ggc ggg gac cgc cgg ctg ctg ccc gcc gcg gtg cac agc																		960		
Ala	Glu	Arg	Gly	Gly	Asp	Arg	Arg	Leu	Leu	Pro	Ala	Ala	Val	His	Ser					
		305							310				315							
gtg acg ctg cga gag gag gag gcg ggc gcg tac gcg ccg ctc acg gcg																		1008		
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cac ggc acc att ctc atc aac cgg gtg ctc gcc tcg tgc tac gct gtc      1056
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      340                      345                      350

atc gag gag cac agc tgg gca cac cgg gcc ttc gcg cct ttc cgc ctg      1104
Ile Glu Glu His Ser Trp Ala His Arg Ala Phe Ala Pro Phe Arg Leu
      355                      360                      365

gcg cac gcg ctg ctg gcc gcg ctg gca ccc gcc cgc acg gac ggc ggg      1152
Ala His Ala Leu Leu Ala Ala Leu Ala Pro Ala Arg Thr Asp Gly Gly
      370                      375                      380

ggc ggg ggc agc atc cct gca gcg caa tct gca acg gaa gcg agg ggc      1200
Gly Gly Gly Ser Ile Pro Ala Ala Gln Ser Ala Thr Glu Ala Arg Gly
      385                      390                      395                      400

gcg gag ccg act gcg ggc atc cac tgg tac tcg cag ctg ctc tac cac      1248
Ala Glu Pro Thr Ala Gly Ile His Trp Tyr Ser Gln Leu Leu Tyr His
      405                      410                      415

att ggc acc tgg ctg ttg gac agc gag acc atg cat ccc ttg gga atg      1296
Ile Gly Thr Trp Leu Leu Asp Ser Glu Thr Met His Pro Leu Gly Met
      420                      425                      430

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Ala Val Lys Ser Ser
      435

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a069seq

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Arg	Arg	His 35	Pro	Lys	Lys	Leu	Thr 40	Pro	Leu	Ala	Tyr	Lys 45	Gln	Phe	Ile	
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Pro	Asn 50	Val	Ala	Glu	Lys	Thr 55	Leu	Gly	Ala	Ser	Gly 60	Arg	Tyr	Glu	Gly	
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Lys 65	Ile	Thr	Arg	Asn	Ser 70	Glu	Arg	Phe	Lys	Glu 75	Leu	Thr	Pro	Asn	Tyr 80	
aat	ccc	gac	att	atc	ttt	aag	gat	gag	gag	aac	acg	gga	gcg	gac	agg	288
Asn	Pro	Asp	Ile	Ile 85	Phe	Lys	Asp	Glu	Glu 90	Asn	Thr	Gly	Ala	Asp 95	Arg	
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Leu	Met	Thr	Gln 100	Arg	Cys	Lys	Asp	Lys 105	Leu	Asn	Ser	Leu	Ala 110	Ile	Ser	
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Val	Met	Asn 115	His	Trp	Pro	Gly	Val 120	Lys	Leu	Arg	Val	Thr 125	Glu	Gly	Trp	
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Asp	Glu 130	Asp	Gly	His	His	Phe 135	Glu	Glu	Ser	Leu	His 140	Tyr	Glu	Gly	Arg	
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Ala 145	Val	Asp	Ile	Thr	Thr 150	Ser	Asp	Arg	Asp	Lys 155	Ser	Lys	Tyr	Gly	Thr 160	
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Leu	Ser	Arg	Leu	Ala 165	Val	Glu	Ala	Gly	Phe 170	Asp	Trp	Val	Tyr	Tyr 175	Glu	
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a069seq

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Phe	Thr	Asp	Arg	Asp	Ser	Thr	Thr	Arg	Arg	Val	Phe	Tyr	Val	Ile	Glu		
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Thr	Gln	Glu	Pro	Val	Glu	Lys	Ile	Thr	Leu	Thr	Ala	Ala	His	Leu	Leu		
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a069seq

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Ala	His	Leu	Ala	Phe	Ala	Pro	Ala	Arg	Leu	Tyr	Tyr	Tyr	Val	Ser	Ser		
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Trp	Leu	Leu	Asp	Ser	Asn	Met	Leu	His	Pro	Leu	Gly	Met	Ser	Val	Asn		
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 <220>
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 1 5 10 15
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 Leu Val Cys Ser Gly Leu Ala Cys Gly Pro Gly Arg Gly Phe Gly Lys
 20 25 30

a069seq

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Pro	Asn 50	Val	Ala	Glu	Lys	Thr 55	Leu	Gly	Ala	Ser	Gly 60	Arg	Tyr	Glu	Gly	
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Lys 65	Ile	Ser	Arg	Asn	Ser 70	Glu	Arg	Phe	Lys	Glu 75	Leu	Thr	Pro	Asn	Tyr 80	
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Asn	Pro	Asp	Ile	Ile 85	Phe	Lys	Asp	Glu	Glu 90	Asn	Thr	Gly	Ala	Asp 95	Arg	
ctg	atg	act	cag	agg	tgt	aag	gac	aag	ttg	aac	gct	ttg	gcc	atc	tcg	336
Leu	Met	Thr 100	Gln	Arg	Cys	Lys	Asp	Lys 105	Leu	Asn	Ala	Leu	Ala 110	Ile	Ser	
gtg	atg	aac	cag	tgg	cca	gga	gtg	aaa	ctg	cgg	gtg	acc	gag	ggc	tgg	384
Val	Met	Asn 115	Gln	Trp	Pro	Gly	Val 120	Lys	Leu	Arg	Val	Thr 125	Glu	Gly	Trp	
gac	gaa	gat	ggc	cac	cac	tca	gag	gag	tct	ctg	cac	tac	gag	ggc	cgc	432
Asp 130	Glu	Asp	Gly	His	His	Ser 135	Glu	Glu	Ser	Leu	His 140	Tyr	Glu	Gly	Arg	
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Ala 145	Val	Asp	Ile	Thr	Thr 150	Ser	Asp	Arg	Asp	Arg 155	Ser	Lys	Tyr	Gly	Met 160	
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Leu	Ala	Arg	Leu	Ala 165	Val	Glu	Ala	Gly	Phe 170	Asp	Trp	Val	Tyr	Tyr 175	Glu	
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Ser	Lys	Ala	His 180	Ile	His	Cys	Ser	Val 185	Lys	Ala	Glu	Asn	Ser 190	Val	Ala	
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a069seq

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Gln	Gly	Gly	Thr	Lys	Leu	Val	Lys	Asp	Leu	Ser	Pro	Gly	Asp	Arg	Val	
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Thr	Arg	Glu	Pro	Arg	Glu	Arg	Leu	Leu	Leu	Thr	Ala	Ala	His	Leu	Leu	
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Phe	Val	Ala	Pro	His	Asn	Asp	Ser	Ala	Thr	Gly	Glu	Pro	Glu	Ala	Ser	
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Phe	Ala	Ser	Arg	Val	Arg	Pro	Gly	Gln	Arg	Val	Tyr	Val	Val	Ala	Glu	
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cgt	gac	ggg	gac	cgc	cgg	ctc	ctg	ccc	gcc	gct	gtg	cac	agc	gtg	acc	1008
Arg	Asp	Gly	Asp	Arg	Arg	Leu	Leu	Pro	Ala	Ala	Val	His	Ser	Val	Thr	
				325					330					335		
cta	agc	gag	gag	gcc	gcg	ggc	gcc	tac	gcg	ccg	ctc	acg	gcc	cag	ggc	1056
Leu	Ser	Glu	Glu	Ala	Ala	Gly	Ala	Tyr	Ala	Pro	Leu	Thr	Ala	Gln	Gly	
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a069seq

Thr	Ile	Leu	Ile	Asn	Arg	Val	Leu	Ala	Ser	Cys	Tyr	Ala	Val	Ile	Glu		
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Glu	His	Ser	Trp	Ala	His	Arg	Ala	Phe	Ala	Pro	Phe	Arg	Leu	Ala	His		
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gcg ctc ctg gct gca ctg gcg ccc gcg cgc acg gac cgc ggc ggg gac 1200																	
Ala	Leu	Leu	Ala	Ala	Leu	Ala	Pro	Ala	Arg	Thr	Asp	Arg	Gly	Gly	Asp		
385					390					395					400		
agc ggc ggc ggg gac cgc ggg ggc ggc ggc ggc aga gta gcc cta acc 1248																	
Ser	Gly	Gly	Gly	Asp	Arg	Gly	Gly	Gly	Gly	Gly	Arg	Val	Ala	Leu	Thr		
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gct cca ggt gct gcc gac gct ccg ggt gcg ggg gcc acc gcg ggc atc 1296																	
Ala	Pro	Gly	Ala	Ala	Asp	Ala	Pro	Gly	Ala	Gly	Ala	Thr	Ala	Gly	Ile		
			420					425					430				
cac tgg tac tcg cag ctg ctc tac caa ata ggc acc tgg ctc ctg gac 1344																	
His	Trp	Tyr	Ser	Gln	Leu	Leu	Tyr	Gln	Ile	Gly	Thr	Trp	Leu	Leu	Asp		
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agc gag gcc ctg cac ccg ctg ggc atg gcg gtc aag tcc agc nnn agc 1392																	
Ser	Glu	Ala	Leu	His	Pro	Leu	Gly	Met	Ala	Val	Lys	Ser	Ser	Xaa	Ser		
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Met Ser

a069seq

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ctg ctg gtg gtg ccc gcg gca tgg ggc tgc ggg ccg ggt cgg gtg gtg      152
Leu Leu Val Val Pro Ala Ala Trp Gly Cys Gly Pro Gly Arg Val Val
      20              25              30

ggc agc cgc cgg cga ccg cca cgc aaa ctc gtg ccg ctc gcc tac aag      200
Gly Ser Arg Arg Arg Pro Pro Arg Lys Leu Val Pro Leu Ala Tyr Lys
      35              40              45              50

cag ttc agc ccc aat gtg ccc gag aag acc ctg ggc gcc agc gga cgc      248
Gln Phe Ser Pro Asn Val Pro Glu Lys Thr Leu Gly Ala Ser Gly Arg
      55              60              65

tat gaa ggc aag atc gct cgc agc tcc gag cgc ttc aag gag ctc acc      296
Tyr Glu Gly Lys Ile Ala Arg Ser Ser Glu Arg Phe Lys Glu Leu Thr
      70              75              80

ccc aat tac aat cca gac atc atc ttc aag gac gag gag aac aca ggc      344
Pro Asn Tyr Asn Pro Asp Ile Ile Phe Lys Asp Glu Glu Asn Thr Gly
      85              90              95

gcc gac cgc ctc atg acc cag cgc tgc aag gac cgc ctg aac tcg ctg      392
Ala Asp Arg Leu Met Thr Gln Arg Cys Lys Asp Arg Leu Asn Ser Leu
      100              105              110

gct atc tcg gtg atg aac cag tgg ccc ggt gtg aag ctg cgg gtg acc      440
Ala Ile Ser Val Met Asn Gln Trp Pro Gly Val Lys Leu Arg Val Thr
      115              120              125              130

gag ggc tgg gac gag gac ggc cac cac tca gag gag tcc ctg cat tat      488
Glu Gly Trp Asp Glu Asp Gly His His Ser Glu Glu Ser Leu His Tyr
      135              140              145

gag ggc cgc gcg gtg gac atc acc aca tca gac cgc gac cgc aat aag      536
Glu Gly Arg Ala Val Asp Ile Thr Thr Ser Asp Arg Asp Arg Asn Lys
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a069seq

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tat tac gag tca aag gcc cac gtg cat tgc tcc gtc aag tcc gag cac	632
Tyr Tyr Glu Ser Lys Ala His Val His Cys Ser Val Lys Ser Glu His	
180 185 190	
tcg gcc gca gcc aag acg ggc ggc tgc ttc cct gcc gga gcc cag gta	680
Ser Ala Ala Ala Lys Thr Gly Gly Cys Phe Pro Ala Gly Ala Gln Val	
195 200 205 210	
cgc ctg gag agt ggg gcg cgt gtg gcc ttg tca gcc gtg agg ccg gga	728
Arg Leu Glu Ser Gly Ala Arg Val Ala Leu Ser Ala Val Arg Pro Gly	
215 220 225	
gac cgt gtg ctg gcc atg ggg gag gat ggg agc ccc acc ttc agc gat	776
Asp Arg Val Leu Ala Met Gly Glu Asp Gly Ser Pro Thr Phe Ser Asp	
230 235 240	
gtg ctc att ttc ctg gac cgc gag ccc cac agg ctg aga gcc ttc cag	824
Val Leu Ile Phe Leu Asp Arg Glu Pro His Arg Leu Arg Ala Phe Gln	
245 250 255	
gtc atc gag act cag gac ccc cca cgc cgc ctg gca ctc aca ccc gct	872
Val Ile Glu Thr Gln Asp Pro Pro Arg Arg Leu Ala Leu Thr Pro Ala	
260 265 270	
cac ctg ctc ttt acg gct gac aat cac acg gag ccg gca gcc cgc ttc	920
His Leu Leu Phe Thr Ala Asp Asn His Thr Glu Pro Ala Ala Arg Phe	
275 280 285 290	
cgg gcc aca ttt gcc agc cac gtg cag cct ggc cag tac gtg ctg gtg	968
Arg Ala Thr Phe Ala Ser His Val Gln Pro Gly Gln Tyr Val Leu Val	
295 300 305	
gct ggg gtg cca ggc ctg cag cct gcc cgc gtg gca gct gtc tct aca	1016
Ala Gly Val Pro Gly Leu Gln Pro Ala Arg Val Ala Ala Val Ser Thr	
310 315 320	

a069seq

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cac gtg gcc ctc ggg gcc tac gcc ccg ctc aca aag cat ggg aca ctg      1064
His Val Ala Leu Gly Ala Tyr Ala Pro Leu Thr Lys His Gly Thr Leu
      325                      330                      335

gtg gtg gag gat gtg gtg gca tcc tgc ttc gcg gcc gtg gct gac cac      1112
Val Val Glu Asp Val Val Ala Ser Cys Phe Ala Ala Val Ala Asp His
      340                      345                      350

cac ctg gct cag ttg gcc ttc tgg ccc ctg aga ctc ttt cac agc ttg      1160
His Leu Ala Gln Leu Ala Phe Trp Pro Leu Arg Leu Phe His Ser Leu
      355                      360                      365                      370

gca tgg ggc agc tgg acc ccg ggg gag ggt gtg cat tgg tac ccc cag      1208
Ala Trp Gly Ser Trp Thr Pro Gly Glu Gly Val His Trp Tyr Pro Gln
      375                      380                      385

ctg ctc tac cgc ctg ggg cgt ctc ctg cta gaa gag ggc agc ttc cac      1256
Leu Leu Tyr Arg Leu Gly Arg Leu Leu Leu Glu Glu Gly Ser Phe His
      390                      395                      400

cca ctg ggc atg tcc ggg gca ggg agc tgaaaggact ccaccgctgc      1303
Pro Leu Gly Met Ser Gly Ala Gly Ser
      405                      410

cctcctggaa ctgctgtact ggggtccagaa gcctctcagc caggagggag ctggccctgg 1363

aaggggacctg agctggggga cactgggtcc tgccatctcc tctgccatga agatacacca 1423

ttgagacttg actgggcaac accagcgtcc cccacccgcg tcgtggtgta gtcatagagc 1483

tgcaagctga gctggcgagg ggatggttgt tgacccctct ctccctagaga ccttgaggct 1543

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a069seq

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gcg ctg cca gcc cag agc tgc ggg ccg ggc cgg ggg ccg gtt ggc cgg      96
Ala Leu Pro Ala Gln Ser Cys Gly Pro Gly Arg Gly Pro Val Gly Arg
      20              25              30

cgc cgc tat gcg cgc aag cag ctc gtg ccg cta ctc tac aag caa ttt     144
Arg Arg Tyr Ala Arg Lys Gln Leu Val Pro Leu Leu Tyr Lys Gln Phe
      35              40              45

gtg ccc ggc gtg cca gag cgg acc ctg ggc gcc agt ggg cca gcg gag     192
Val Pro Gly Val Pro Glu Arg Thr Leu Gly Ala Ser Gly Pro Ala Glu
      50              55              60

ggg agg gtg gca agg ggc tcc gag cgc ttc cgg gac ctc gtg ccc aac     240
Gly Arg Val Ala Arg Gly Ser Glu Arg Phe Arg Asp Leu Val Pro Asn
      65              70              75              80

tac aac ccc gac atc atc ttc aag gat gag gag aac agt gga gcc gac     288
Tyr Asn Pro Asp Ile Ile Phe Lys Asp Glu Glu Asn Ser Gly Ala Asp
      85              90              95

cgc ctg atg acc gag cgt tgc aag gag agg gtg aac gct ttg gcc att     336
Arg Leu Met Thr Glu Arg Cys Lys Glu Arg Val Asn Ala Leu Ala Ile
      100             105             110

gcc gtg atg aac atg tgg ccc gga gtg cgc cta cga gtg act gag ggc     384
Ala Val Met Asn Met Trp Pro Gly Val Arg Leu Arg Val Thr Glu Gly
      115             120             125

tgg gac gag gac ggc cac cac gct cag gat tca ctc cac tac gaa ggc     432
Trp Asp Glu Asp Gly His His Ala Gln Asp Ser Leu His Tyr Glu Gly
      130             135             140

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a069seq

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 145 150 155 160
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 Leu Leu Ala Arg Leu Ala Val Glu Ala Gly Phe Asp Trp Val Tyr Tyr
 165 170 175
 gag tcc cgc aac cac gtc cac gtg tcg gtc aaa gct gat aac tca ctg 576
 Glu Ser Arg Asn His Val His Val Ser Val Lys Ala Asp Asn Ser Leu
 180 185 190
 gcg gtc cgg gcg ggc ggc tgc ttt ccg gga aat gca act gtg cgc ctg 624
 Ala Val Arg Ala Gly Gly Cys Phe Pro Gly Asn Ala Thr Val Arg Leu
 195 200 205
 tgg agc ggc gag cgg aaa ggg ctg cgg gaa ctg cac cgc gga gac tgg 672
 Trp Ser Gly Glu Arg Lys Gly Leu Arg Glu Leu His Arg Gly Asp Trp
 210 215 220
 gtt ttg gcg gcc gat gcg tca ggc cgg gtg gtg ccc acg ccg gtg ctg 720
 Val Leu Ala Ala Asp Ala Ser Gly Arg Val Val Pro Thr Pro Val Leu
 225 230 235 240
 ctc ttc ctg gac cgg gac ttg cag cgc cgg gct tca ttt gtg gct gtg 768
 Leu Phe Leu Asp Arg Asp Leu Gln Arg Arg Ala Ser Phe Val Ala Val
 245 250 255
 gag acc gag tgg cct cca cgc aaa ctg ttg ctc acg ccc tgg cac ctg 816
 Glu Thr Glu Trp Pro Pro Arg Lys Leu Leu Leu Thr Pro Trp His Leu
 260 265 270
 gtg ttt gcc gct cga ggg ccg gcg ccc gcg cca ggc gac ttt gca ccg 864
 Val Phe Ala Ala Arg Gly Pro Ala Pro Ala Pro Gly Asp Phe Ala Pro
 275 280 285
 gtg ttc gcg cgc cgg cta cgc gct ggg gac tcg gtg ctg gcg ccc ggc 912
 Val Phe Ala Arg Arg Leu Arg Ala Gly Asp Ser Val Leu Ala Pro Gly
 290 295 300

a069seq

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ggg gat gcg ctt cgg cca gcg cgc gtg gcc cgt gtg gcg cgg gag gaa      960
Gly Asp Ala Leu Arg Pro Ala Arg Val Ala Arg Val Ala Arg Glu Glu
305                      310                      315                      320

gcc gtg ggc gtg ttc gcg ccg ctc acc gcg cac ggg acg ctg ctg gtg      1008
Ala Val Gly Val Phe Ala Pro Leu Thr Ala His Gly Thr Leu Leu Val
                      325                      330                      335

aac gat gtc ctg gcc tct tgc tac gcg gtt ctg gag agt cac cag tgg      1056
Asn Asp Val Leu Ala Ser Cys Tyr Ala Val Leu Glu Ser His Gln Trp
                      340                      345                      350

gcg cac cgc gct ttt gcc ccc ttg aga ctg ctg cac gcg cta ggg gcg      1104
Ala His Arg Ala Phe Ala Pro Leu Arg Leu Leu His Ala Leu Gly Ala
                      355                      360                      365

ctg ctc ccc ggc ggg gcc gtc cag ccg act ggc atg cat tgg tac tct      1152
Leu Leu Pro Gly Gly Ala Val Gln Pro Thr Gly Met His Trp Tyr Ser
370                      375                      380

cgg ctc ctc tac cgc tta gcg gag gag cta ctg ggc tg                      1190
Arg Leu Leu Tyr Arg Leu Ala Glu Glu Leu Leu Gly
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<212> DNA
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 1                      5                      10                      15

agc ttg ctt ctg acg cct tgt gga tta gcc tgt ggt cct ggt aga ggt      96
Ser Leu Leu Leu Thr Pro Cys Gly Leu Ala Cys Gly Pro Gly Arg Gly
                20                      25                      30

tat gga aaa cga aga cac cca aag aaa tta acc ccg ttg gct tac aag      144

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a069seq

Tyr	Gly	Lys	Arg	Arg	His	Pro	Lys	Lys	Leu	Thr	Pro	Leu	Ala	Tyr	Lys		
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Gln	Phe	Ile	Pro	Asn	Val	Ala	Glu	Lys	Thr	Leu	Gly	Ala	Ser	Gly	Lys		
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tac	gaa	ggc	aaa	atc	aca	agg	aat	tca	gag	aga	ttt	aaa	gag	ctg	att	240	
Tyr	Glu	Gly	Lys	Ile	Thr	Arg	Asn	Ser	Glu	Arg	Phe	Lys	Glu	Leu	Ile		
65					70					75					80		
ccg	aat	tat	aat	ccc	gat	atc	atc	ttt	aag	gac	gag	gaa	aac	aca	aac	288	
Pro	Asn	Tyr	Asn	Pro	Asp	Ile	Ile	Phe	Lys	Asp	Glu	Glu	Asn	Thr	Asn		
				85					90					95			
gct	gac	agg	ctg	atg	acc	aag	cgc	tgt	aag	gac	aag	tta	aat	tcg	ttg	336	
Ala	Asp	Arg	Leu	Met	Thr	Lys	Arg	Cys	Lys	Asp	Lys	Leu	Asn	Ser	Leu		
			100					105					110				
gcc	ata	tcc	gtc	atg	aac	cac	tgg	ccc	ggc	gtg	aaa	ctg	cgc	gtc	act	384	
Ala	Ile	Ser	Val	Met	Asn	His	Trp	Pro	Gly	Val	Lys	Leu	Arg	Val	Thr		
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gaa	ggc	tgg	gat	gag	gat	ggt	cac	cat	tta	gaa	gaa	tct	ttg	cac	tat	432	
Glu	Gly	Trp	Asp	Glu	Asp	Gly	His	His	Leu	Glu	Glu	Ser	Leu	His	Tyr		
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Glu	Gly	Arg	Ala	Val	Asp	Ile	Thr	Thr	Ser	Asp	Arg	Asp	Lys	Ser	Lys		
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Tyr	Gly	Met	Leu	Ser	Arg	Leu	Ala	Val	Glu	Ala	Gly	Phe	Asp	Trp	Val		
				165					170					175			
tat	tat	gaa	tct	aaa	gcc	cac	ata	cac	tgc	tct	gtc	aaa	gca	gaa	aat	576	
Tyr	Tyr	Glu	Ser	Lys	Ala	His	Ile	His	Cys	Ser	Val	Lys	Ala	Glu	Asn		
			180				185						190				
tca	gtg	gct	gct	aaa	tca	gga	gga	tgt	ttt	cct	ggg	tct	ggg	acg	gtg	624	

a069seq

Ser	Val	Ala	Ala	Lys	Ser	Gly	Gly	Cys	Phe	Pro	Gly	Ser	Gly	Thr	Val		
		195					200					205					
aca	ctt	ggt	gat	ggg	acg	agg	aaa	ccc	atc	aaa	gat	ctt	aaa	gtg	ggc	672	
Thr	Leu	Gly	Asp	Gly	Thr	Arg	Lys	Pro	Ile	Lys	Asp	Leu	Lys	Val	Gly		
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Asp	Arg	Val	Leu	Ala	Ala	Asp	Glu	Lys	Gly	Asn	Val	Leu	Ile	Ser	Asp		
225					230					235					240		
ttt	att	atg	ttt	ata	gac	cac	gat	ccg	aca	acg	aga	agg	caa	ttc	atc	768	
Phe	Ile	Met	Phe	Ile	Asp	His	Asp	Pro	Thr	Thr	Arg	Arg	Gln	Phe	Ile		
				245					250					255			
gtc	atc	gag	acg	tca	gaa	cct	ttc	acc	aag	ctc	acc	ctc	act	gcc	gcg	816	
Val	Ile	Glu	Thr	Ser	Glu	Pro	Phe	Thr	Lys	Leu	Thr	Leu	Thr	Ala	Ala		
			260					265					270				
cac	cta	ggt	ttc	ggt	gga	aac	tct	tca	gca	gct	tcg	ggt	ata	aca	gca	864	
His	Leu	Val	Phe	Val	Gly	Asn	Ser	Ser	Ala	Ala	Ser	Gly	Ile	Thr	Ala		
		275					280					285					
aca	ttt	gcc	agc	aac	gtg	aag	cct	gga	gat	aca	ggt	tta	gtg	tgg	gaa	912	
Thr	Phe	Ala	Ser	Asn	Val	Lys	Pro	Gly	Asp	Thr	Val	Leu	Val	Trp	Glu		
	290					295					300						
gac	aca	tgc	gag	agc	ctc	aag	agc	ggt	aca	gtg	aaa	agg	att	tac	act	960	
Asp	Thr	Cys	Glu	Ser	Leu	Lys	Ser	Val	Thr	Val	Lys	Arg	Ile	Tyr	Thr		
305					310					315					320		
gag	gag	cac	gag	ggc	tct	ttt	gcg	cca	gtc	acc	gcg	cac	gga	acc	ata	1008	
Glu	Glu	His	Glu	Gly	Ser	Phe	Ala	Pro	Val	Thr	Ala	His	Gly	Thr	Ile		
				325					330				335				
ata	gtg	gat	cag	gtg	ttg	gca	tcg	tgc	tac	gcg	gtc	att	gag	aac	cac	1056	
Ile	Val	Asp	Gln	Val	Leu	Ala	Ser	Cys	Tyr	Ala	Val	Ile	Glu	Asn	His		
			340					345					350				
aaa	tgg	gca	cat	tgg	gct	ttt	gcg	ccg	gtc	agg	ttg	tgt	cac	aag	ctg	1104	
Lys	Trp	Ala	His	Trp	Ala	Phe	Ala	Pro	Val	Arg	Leu	Cys	His	Lys	Leu		

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a069seq

355 360 365
 atg acg tgg ctt ttt ccg gct cgt gaa tca aac gtc aat ttt cag gag 1152
 Met Thr Trp Leu Phe Pro Ala Arg Glu Ser Asn Val Asn Phe Gln Glu
 370 375 380
 gat ggt atc cac tgg tac tca aat atg ctg ttt cac atc ggc tct tgg 1200
 Asp Gly Ile His Trp Tyr Ser Asn Met Leu Phe His Ile Gly Ser Trp
 385 390 395 400
 ctg ctg gac aga gac tct ttc cat cca ctc ggg att tta cac tta agt 1248
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 405 410 415
 tga 1251

<210> 10
 <211> 425
 <212> PRT
 <213> Gallus sp.

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 Cys Ala Leu Leu Val Ser Ser Gly Leu Thr Cys Gly Pro Gly Arg Gly
 20 25 30
 Ile Gly Lys Arg Arg His Pro Lys Lys Leu Thr Pro Leu Ala Tyr Lys
 35 40 45
 Gln Phe Ile Pro Asn Val Ala Glu Lys Thr Leu Gly Ala Ser Gly Arg
 50 55 60
 Tyr Glu Gly Lys Ile Thr Arg Asn Ser Glu Arg Phe Lys Glu Leu Thr
 65 70 75 80
 Pro Asn Tyr Asn Pro Asp Ile Ile Phe Lys Asp Glu Glu Asn Thr Gly
 85 90 95
 Ala Asp Arg Leu Met Thr Gln Arg Cys Lys Asp Lys Leu Asn Ala Leu
 100 105 110
 Ala Ile Ser Val Met Asn Gln Trp Pro Gly Val Lys Leu Arg Val Thr
 115 120 125
 Glu Gly Trp Asp Glu Asp Gly His His Ser Glu Glu Ser Leu His Tyr

a069seq

130		135		140
Glu Gly Arg Ala Val Asp Ile Thr Thr Ser Asp Arg Asp Arg Ser Lys				
145		150		155
Tyr Gly Met Leu Ala Arg Leu Ala Val Glu Ala Gly Phe Asp Trp Val				
	165		170	175
Tyr Tyr Glu Ser Lys Ala His Ile His Cys Ser Val Lys Ala Glu Asn				
	180		185	190
Ser Val Ala Ala Lys Ser Gly Gly Cys Phe Pro Gly Ser Ala Thr Val				
	195		200	205
His Leu Glu His Gly Gly Thr Lys Leu Val Lys Asp Leu Ser Pro Gly				
	210		215	220
Asp Arg Val Leu Ala Ala Asp Ala Asp Gly Arg Leu Leu Tyr Ser Asp				
	225		230	235
Phe Leu Thr Phe Leu Asp Arg Met Asp Ser Ser Arg Lys Leu Phe Tyr				
	245		250	255
Val Ile Glu Thr Arg Gln Pro Arg Ala Arg Leu Leu Leu Thr Ala Ala				
	260		265	270
His Leu Leu Phe Val Ala Pro Gln His Asn Gln Ser Glu Ala Thr Gly				
	275		280	285
Ser Thr Ser Gly Gln Ala Leu Phe Ala Ser Asn Val Lys Pro Gly Gln				
	290		295	300
Arg Val Tyr Val Leu Gly Glu Gly Gly Gln Gln Leu Leu Pro Ala Ser				
	305		310	315
Val His Ser Val Ser Leu Arg Glu Glu Ala Ser Gly Ala Tyr Ala Pro				
	325		330	335
Leu Thr Ala Gln Gly Thr Ile Leu Ile Asn Arg Val Leu Ala Ser Cys				
	340		345	350
Tyr Ala Val Ile Glu Glu His Ser Trp Ala His Trp Ala Phe Ala Pro				
	355		360	365
Phe Arg Leu Ala Gln Gly Leu Leu Ala Ala Leu Cys Pro Asp Gly Ala				
	370		375	380
Ile Pro Thr Ala Ala Thr Thr Thr Thr Gly Ile His Trp Tyr Ser Arg				
	385		390	395
Leu Leu Tyr Arg Ile Gly Ser Trp Val Leu Asp Gly Asp Ala Leu His				

a069seq
410

405

415

Pro Leu Gly Met Val Ala Pro Ala Ser
420 425

<210> 11
<211> 396
<212> PRT
<213> Murine sp.

<400> 11

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Ala Leu Ser Ala Gln Ser Cys Gly Pro Gly Arg Gly Pro Val Gly Arg
20 25 30
Arg Arg Tyr Val Arg Lys Gln Leu Val Pro Leu Leu Tyr Lys Gln Phe
35 40 45
Val Pro Ser Met Pro Glu Arg Thr Leu Gly Ala Ser Gly Pro Ala Glu
50 55 60
Gly Arg Val Thr Arg Gly Ser Glu Arg Phe Arg Asp Leu Val Pro Asn
65 70 75 80
Tyr Asn Pro Asp Ile Ile Phe Lys Asp Glu Glu Asn Ser Gly Ala Asp
85 90 95
Arg Leu Met Thr Glu Arg Cys Lys Glu Arg Val Asn Ala Leu Ala Ile
100 105 110
Ala Val Met Asn Met Trp Pro Gly Val Arg Leu Arg Val Thr Glu Gly
115 120 125
Trp Asp Glu Asp Gly His His Ala Gln Asp Ser Leu His Tyr Glu Gly
130 135 140
Arg Ala Leu Asp Ile Thr Thr Ser Asp Arg Asp Arg Asn Lys Tyr Gly
145 150 155 160
Leu Leu Ala Arg Leu Ala Val Glu Ala Gly Phe Asp Trp Val Tyr Tyr
165 170 175
Glu Ser Arg Asn His Ile His Val Ser Val Lys Ala Asp Asn Ser Leu
180 185 190
Ala Val Arg Ala Gly Gly Cys Phe Pro Gly Asn Ala Thr Val Arg Leu
195 200 205
Arg Ser Gly Glu Arg Lys Gly Leu Arg Glu Leu His Arg Gly Asp Trp

a069seq

210

215

220

Val Leu Ala Ala Asp Ala Ala Gly Arg Val Val Pro Thr Pro Val Leu
225 230 235 240

Leu Phe Leu Asp Arg Asp Leu Gln Arg Arg Ala Ser Phe Val Ala Val
245 250 255

Glu Thr Glu Arg Pro Pro Arg Lys Leu Leu Leu Thr Pro Trp His Leu
260 265 270

Val Phe Ala Ala Arg Gly Pro Ala Pro Ala Pro Gly Asp Phe Ala Pro
275 280 285

Val Phe Ala Arg Arg Leu Arg Ala Gly Asp Ser Val Leu Ala Pro Gly
290 295 300

Gly Asp Ala Leu Gln Pro Ala Arg Val Ala Arg Val Ala Arg Glu Glu
305 310 315 320

Ala Val Gly Val Phe Ala Pro Leu Thr Ala His Gly Thr Leu Leu Val
325 330 335

Asn Asp Val Leu Ala Ser Cys Tyr Ala Val Leu Glu Ser His Gln Trp
340 345 350

Ala His Arg Ala Phe Ala Pro Leu Arg Leu Leu His Ala Leu Gly Ala
355 360 365

Leu Leu Pro Gly Gly Ala Val Gln Pro Thr Gly Met His Trp Tyr Ser
370 375 380

Arg Leu Leu Tyr Arg Leu Ala Glu Glu Leu Met Gly
385 390 395

<210> 12

<211> 411

<212> PRT

<213> Murine sp.

<400> 12

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Leu Leu Leu Leu Leu Val Pro Ala Ala Arg Gly Cys Gly Pro Gly Arg
20 25 30

Val Val Gly Ser Arg Arg Arg Pro Pro Arg Lys Leu Val Pro Leu Ala
35 40 45

Tyr Lys Gln Phe Ser Pro Asn Val Pro Glu Lys Thr Leu Gly Ala Ser

a069seq

50					55					60					
Gly	Arg	Tyr	Glu	Gly	Lys	Ile	Ala	Arg	Ser	Ser	Glu	Arg	Phe	Lys	Glu
65					70					75					80
Leu	Thr	Pro	Asn	Tyr	Asn	Pro	Asp	Ile	Ile	Phe	Lys	Asp	Glu	Glu	Asn
				85					90					95	
Thr	Gly	Ala	Asp	Arg	Leu	Met	Thr	Gln	Arg	Cys	Lys	Asp	Arg	Leu	Asn
			100					105					110		
Ser	Leu	Ala	Ile	Ser	Val	Met	Asn	Gln	Trp	Pro	Gly	Val	Lys	Leu	Arg
		115					120					125			
Val	Thr	Glu	Gly	Arg	Asp	Glu	Asp	Gly	His	His	Ser	Glu	Glu	Ser	Leu
		130				135					140				
His	Tyr	Glu	Gly	Arg	Ala	Val	Asp	Ile	Thr	Thr	Ser	Asp	Arg	Asp	Arg
145					150					155					160
Asn	Lys	Tyr	Gly	Leu	Leu	Ala	Arg	Leu	Ala	Val	Glu	Ala	Gly	Phe	Asp
				165					170					175	
Trp	Val	Tyr	Tyr	Glu	Ser	Lys	Ala	His	Val	His	Cys	Ser	Val	Lys	Ser
			180					185					190		
Glu	His	Ser	Ala	Ala	Ala	Lys	Thr	Gly	Gly	Cys	Phe	Pro	Ala	Gly	Ala
		195					200					205			
Gln	Val	Arg	Leu	Glu	Asn	Gly	Glu	Arg	Val	Ala	Leu	Ser	Ala	Val	Lys
	210					215					220				
Pro	Gly	Asp	Arg	Val	Leu	Ala	Met	Gly	Glu	Asp	Gly	Thr	Pro	Thr	Phe
225					230					235					240
Ser	Asp	Val	Leu	Ile	Phe	Leu	Asp	Arg	Glu	Pro	Asn	Arg	Leu	Arg	Ala
				245					250					255	
Phe	Gln	Val	Ile	Glu	Thr	Gln	Asp	Pro	Pro	Arg	Arg	Leu	Ala	Leu	Thr
			260					265					270		
Pro	Ala	His	Leu	Leu	Phe	Ile	Ala	Asp	Asn	His	Thr	Glu	Pro	Ala	Ala
		275					280					285			
His	Phe	Arg	Ala	Thr	Phe	Ala	Ser	His	Val	Gln	Pro	Gly	Gln	Tyr	Val
	290					295					300				
Leu	Val	Ser	Gly	Val	Pro	Gly	Leu	Gln	Pro	Ala	Arg	Val	Ala	Ala	Val
305					310					315					320
Ser	Thr	His	Val	Ala	Leu	Gly	Ser	Tyr	Ala	Pro	Leu	Thr	Arg	His	Gly

a069seq
330

325

335

Thr Leu Val Val Glu Asp Val Val Ala Ser Cys Phe Ala Ala Val Ala
340 345 350

Asp His His Leu Ala Gln Leu Ala Phe Trp Pro Leu Arg Leu Phe Pro
355 360 365

Ser Leu Ala Trp Gly Ser Trp Thr Pro Ser Glu Gly Val His Ser Tyr
370 375 380

Pro Gln Met Leu Tyr Arg Leu Gly Arg Leu Leu Leu Glu Glu Ser Thr
385 390 395 400

Phe His Pro Leu Gly Met Ser Gly Ala Gly Ser
405 410

<210> 13

<211> 437

<212> PRT

<213> Murine sp.

<400> 13

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Leu Leu Val Cys Pro Gly Leu Ala Cys Gly Pro Gly Arg Gly Phe Gly
20 25 30

Lys Arg Arg His Pro Lys Lys Leu Thr Pro Leu Ala Tyr Lys Gln Phe
35 40 45

Ile Pro Asn Val Ala Glu Lys Thr Leu Gly Ala Ser Gly Arg Tyr Glu
50 55 60

Gly Lys Ile Thr Arg Asn Ser Glu Arg Phe Lys Glu Leu Thr Pro Asn
65 70 75 80

Tyr Asn Pro Asp Ile Ile Phe Lys Asp Glu Glu Asn Thr Gly Ala Asp
85 90 95

Arg Leu Met Thr Gln Arg Cys Lys Asp Lys Leu Asn Ala Leu Ala Ile
100 105 110

Ser Val Met Asn Gln Trp Pro Gly Val Arg Leu Arg Val Thr Glu Gly
115 120 125

Trp Asp Glu Asp Gly His His Ser Glu Glu Ser Leu His Tyr Glu Gly
130 135 140

Arg Ala Val Asp Ile Thr Thr Ser Asp Arg Asp Arg Ser Lys Tyr Gly

a069seq

145					150					155					160
Met	Leu	Ala	Arg	Leu	Ala	Val	Glu	Ala	Gly	Phe	Asp	Trp	Val	Tyr	Tyr
				165					170					175	
Glu	Ser	Lys	Ala	His	Ile	His	Cys	Ser	Val	Lys	Ala	Glu	Asn	Ser	Val
			180					185					190		
Ala	Ala	Lys	Ser	Gly	Gly	Cys	Phe	Pro	Gly	Ser	Ala	Thr	Val	His	Leu
		195					200					205			
Glu	Gln	Gly	Gly	Thr	Lys	Leu	Val	Lys	Asp	Leu	Arg	Pro	Gly	Asp	Arg
	210					215					220				
Val	Leu	Ala	Ala	Asp	Asp	Gln	Gly	Arg	Leu	Leu	Tyr	Ser	Asp	Phe	Leu
225					230					235					240
Thr	Phe	Leu	Asp	Arg	Asp	Glu	Gly	Ala	Lys	Lys	Val	Phe	Tyr	Val	Ile
				245					250					255	
Glu	Thr	Leu	Glu	Pro	Arg	Glu	Arg	Leu	Leu	Leu	Thr	Ala	Ala	His	Leu
			260					265					270		
Leu	Phe	Val	Ala	Pro	His	Asn	Asp	Ser	Gly	Pro	Thr	Pro	Gly	Pro	Ser
		275					280					285			
Ala	Leu	Phe	Ala	Ser	Arg	Val	Arg	Pro	Gly	Gln	Arg	Val	Tyr	Val	Val
	290					295					300				
Ala	Glu	Arg	Gly	Gly	Asp	Arg	Arg	Leu	Leu	Pro	Ala	Ala	Val	His	Ser
305					310					315					320
Val	Thr	Leu	Arg	Glu	Glu	Glu	Ala	Gly	Ala	Tyr	Ala	Pro	Leu	Thr	Ala
				325					330					335	
His	Gly	Thr	Ile	Leu	Ile	Asn	Arg	Val	Leu	Ala	Ser	Cys	Tyr	Ala	Val
			340					345					350		
Ile	Glu	Glu	His	Ser	Trp	Ala	His	Arg	Ala	Phe	Ala	Pro	Phe	Arg	Leu
		355					360					365			
Ala	His	Ala	Leu	Leu	Ala	Ala	Leu	Ala	Pro	Ala	Arg	Thr	Asp	Gly	Gly
	370					375					380				
Gly	Gly	Gly	Ser	Ile	Pro	Ala	Ala	Gln	Ser	Ala	Thr	Glu	Ala	Arg	Gly
385					390					395					400
Ala	Glu	Pro	Thr	Ala	Gly	Ile	His	Trp	Tyr	Ser	Gln	Leu	Leu	Tyr	His
				405					410					415	
Ile	Gly	Thr	Trp	Leu	Leu	Asp	Ser	Glu	Thr	Met	His	Pro	Leu	Gly	Met

a069seq
425

420

430

Ala Val Lys Ser Ser
435

<210> 14

<211> 418

<212> PRT

<213> zebrafish sp.

<400> 14

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Leu Val Val Ser Gly Leu Ala Cys Gly Pro Gly Arg Gly Tyr Gly Arg
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Arg Arg His Pro Lys Lys Leu Thr Pro Leu Ala Tyr Lys Gln Phe Ile
35 40 45

Pro Asn Val Ala Glu Lys Thr Leu Gly Ala Ser Gly Arg Tyr Glu Gly
50 55 60

Lys Ile Thr Arg Asn Ser Glu Arg Phe Lys Glu Leu Thr Pro Asn Tyr
65 70 75 80

Asn Pro Asp Ile Ile Phe Lys Asp Glu Glu Asn Thr Gly Ala Asp Arg
85 90 95

Leu Met Thr Gln Arg Cys Lys Asp Lys Leu Asn Ser Leu Ala Ile Ser
100 105 110

Val Met Asn His Trp Pro Gly Val Lys Leu Arg Val Thr Glu Gly Trp
115 120 125

Asp Glu Asp Gly His His Phe Glu Glu Ser Leu His Tyr Glu Gly Arg
130 135 140

Ala Val Asp Ile Thr Thr Ser Asp Arg Asp Lys Ser Lys Tyr Gly Thr
145 150 155 160

Leu Ser Arg Leu Ala Val Glu Ala Gly Phe Asp Trp Val Tyr Tyr Glu
165 170 175

Ser Lys Ala His Ile His Cys Ser Val Lys Ala Glu Asn Ser Val Ala
180 185 190

Ala Lys Ser Gly Gly Cys Phe Pro Gly Ser Ala Leu Val Ser Leu Gln
195 200 205

Asp Gly Gly Gln Lys Ala Val Lys Asp Leu Asn Pro Gly Asp Lys Val

a069seq

210		215		220
Leu Ala Ala Asp Ser Ala Gly Asn Leu Val Phe Ser Asp Phe Ile Met				
225		230		240
Phe Thr Asp Arg Asp Ser Thr Thr Arg Arg Val Phe Tyr Val Ile Glu				
	245		250	255
Thr Gln Glu Pro Val Glu Lys Ile Thr Leu Thr Ala Ala His Leu Leu				
	260		265	270
Phe Val Leu Asp Asn Ser Thr Glu Asp Leu His Thr Met Thr Ala Ala				
	275		280	285
Tyr Ala Ser Ser Val Arg Ala Gly Gln Lys Val Met Val Val Asp Asp				
	290		295	300
Ser Gly Gln Leu Lys Ser Val Ile Val Gln Arg Ile Tyr Thr Glu Glu				
305		310		320
Gln Arg Gly Ser Phe Ala Pro Val Thr Ala His Gly Thr Ile Val Val				
	325		330	335
Asp Arg Ile Leu Ala Ser Cys Tyr Ala Val Ile Glu Asp Gln Gly Leu				
	340		345	350
Ala His Leu Ala Phe Ala Pro Ala Arg Leu Tyr Tyr Tyr Val Ser Ser				
	355		360	365
Phe Leu Ser Pro Lys Thr Pro Ala Val Gly Pro Met Arg Leu Tyr Asn				
	370		375	380
Arg Arg Gly Ser Thr Gly Thr Pro Gly Ser Cys His Gln Met Gly Thr				
385		390		400
Trp Leu Leu Asp Ser Asn Met Leu His Pro Leu Gly Met Ser Val Asn				
	405		410	415

Ser Ser

<210> 15

<211> 475

<212> PRT

<213> Homo sapiens

<220>

<223> Xaa at position 463 is any or unknown amino acid

<400> 15

Met	Leu	Leu	Leu	Ala	Arg	Cys	Leu	Leu	Leu	Val	Leu	Val	Ser	Ser	Leu
1				5						10					15

a069seq

Leu Val Cys Ser Gly Leu Ala Cys Gly Pro Gly Arg Gly Phe Gly Lys
 20 25 30
 Arg Arg His Pro Lys Lys Leu Thr Pro Leu Ala Tyr Lys Gln Phe Ile
 35 40 45
 Pro Asn Val Ala Glu Lys Thr Leu Gly Ala Ser Gly Arg Tyr Glu Gly
 50 55 60
 Lys Ile Ser Arg Asn Ser Glu Arg Phe Lys Glu Leu Thr Pro Asn Tyr
 65 70 75 80
 Asn Pro Asp Ile Ile Phe Lys Asp Glu Glu Asn Thr Gly Ala Asp Arg
 85 90 95
 Leu Met Thr Gln Arg Cys Lys Asp Lys Leu Asn Ala Leu Ala Ile Ser
 100 105 110
 Val Met Asn Gln Trp Pro Gly Val Lys Leu Arg Val Thr Glu Gly Trp
 115 120 125
 Asp Glu Asp Gly His His Ser Glu Glu Ser Leu His Tyr Glu Gly Arg
 130 135 140
 Ala Val Asp Ile Thr Thr Ser Asp Arg Asp Arg Ser Lys Tyr Gly Met
 145 150 155 160
 Leu Ala Arg Leu Ala Val Glu Ala Gly Phe Asp Trp Val Tyr Tyr Glu
 165 170 175
 Ser Lys Ala His Ile His Cys Ser Val Lys Ala Glu Asn Ser Val Ala
 180 185 190
 Ala Lys Ser Gly Gly Cys Phe Pro Gly Ser Ala Thr Val His Leu Glu
 195 200 205
 Gln Gly Gly Thr Lys Leu Val Lys Asp Leu Ser Pro Gly Asp Arg Val
 210 215 220
 Leu Ala Ala Asp Asp Gln Gly Arg Leu Leu Tyr Ser Asp Phe Leu Thr
 225 230 235 240
 Phe Leu Asp Arg Asp Asp Gly Ala Lys Lys Val Phe Tyr Val Ile Glu
 245 250 255
 Thr Arg Glu Pro Arg Glu Arg Leu Leu Leu Thr Ala Ala His Leu Leu
 260 265 270
 Phe Val Ala Pro His Asn Asp Ser Ala Thr Gly Glu Pro Glu Ala Ser
 275 280 285

a069seq

Ser Gly Ser Gly Pro Pro Ser Gly Gly Ala Leu Gly Pro Arg Ala Leu
 290 295 300
 Phe Ala Ser Arg Val Arg Pro Gly Gln Arg Val Tyr Val Val Ala Glu
 305 310 315 320
 Arg Asp Gly Asp Arg Arg Leu Leu Pro Ala Ala Val His Ser Val Thr
 325 330 335
 Leu Ser Glu Glu Ala Ala Gly Ala Tyr Ala Pro Leu Thr Ala Gln Gly
 340 345 350
 Thr Ile Leu Ile Asn Arg Val Leu Ala Ser Cys Tyr Ala Val Ile Glu
 355 360 365
 Glu His Ser Trp Ala His Arg Ala Phe Ala Pro Phe Arg Leu Ala His
 370 375 380
 Ala Leu Leu Ala Ala Leu Ala Pro Ala Arg Thr Asp Arg Gly Gly Asp
 385 390 395 400
 Ser Gly Gly Gly Asp Arg Gly Gly Gly Gly Gly Arg Val Ala Leu Thr
 405 410 415
 Ala Pro Gly Ala Ala Asp Ala Pro Gly Ala Gly Ala Thr Ala Gly Ile
 420 425 430
 His Trp Tyr Ser Gln Leu Leu Tyr Gln Ile Gly Thr Trp Leu Leu Asp
 435 440 445
 Ser Glu Ala Leu His Pro Leu Gly Met Ala Val Lys Ser Ser Xaa Ser
 450 455 460
 Arg Gly Ala Gly Gly Gly Ala Arg Glu Gly Ala
 465 470 475

<210> 16

<211> 411

<212> PRT

<213> Homo sapiens

<400> 16

Met Ser Pro Ala Arg Leu Arg Pro Arg Leu His Phe Cys Leu Val Leu
 1 5 10 15
 Leu Leu Leu Leu Val Val Pro Ala Ala Trp Gly Cys Gly Pro Gly Arg
 20 25 30
 Val Val Gly Ser Arg Arg Arg Pro Pro Arg Lys Leu Val Pro Leu Ala
 35 40 45

a069seq

Tyr	Lys	Gln	Phe	Ser	Pro	Asn	Val	Pro	Glu	Lys	Thr	Leu	Gly	Ala	Ser	
	50					55					60					
Gly	Arg	Tyr	Glu	Gly	Lys	Ile	Ala	Arg	Ser	Ser	Glu	Arg	Phe	Lys	Glu	
65					70					75					80	
Leu	Thr	Pro	Asn	Tyr	Asn	Pro	Asp	Ile	Ile	Phe	Lys	Asp	Glu	Glu	Asn	
				85					90					95		
Thr	Gly	Ala	Asp	Arg	Leu	Met	Thr	Gln	Arg	Cys	Lys	Asp	Arg	Leu	Asn	
			100					105					110			
Ser	Leu	Ala	Ile	Ser	Val	Met	Asn	Gln	Trp	Pro	Gly	Val	Lys	Leu	Arg	
		115					120					125				
Val	Thr	Glu	Gly	Trp	Asp	Glu	Asp	Gly	His	His	Ser	Glu	Glu	Ser	Leu	
	130					135					140					
His	Tyr	Glu	Gly	Arg	Ala	Val	Asp	Ile	Thr	Thr	Ser	Asp	Arg	Asp	Arg	
145					150					155					160	
Asn	Lys	Tyr	Gly	Leu	Leu	Ala	Arg	Leu	Ala	Val	Glu	Ala	Gly	Phe	Asp	
				165					170					175		
Trp	Val	Tyr	Tyr	Glu	Ser	Lys	Ala	His	Val	His	Cys	Ser	Val	Lys	Ser	
			180					185					190			
Glu	His	Ser	Ala	Ala	Ala	Lys	Thr	Gly	Gly	Cys	Phe	Pro	Ala	Gly	Ala	
		195					200					205				
Gln	Val	Arg	Leu	Glu	Ser	Gly	Ala	Arg	Val	Ala	Leu	Ser	Ala	Val	Arg	
	210					215					220					
Pro	Gly	Asp	Arg	Val	Leu	Ala	Met	Gly	Glu	Asp	Gly	Ser	Pro	Thr	Phe	
225					230					235					240	
Ser	Asp	Val	Leu	Ile	Phe	Leu	Asp	Arg	Glu	Pro	His	Arg	Leu	Arg	Ala	
				245					250					255		
Phe	Gln	Val	Ile	Glu	Thr	Gln	Asp	Pro	Pro	Arg	Arg	Leu	Ala	Leu	Thr	
			260					265					270			
Pro	Ala	His	Leu	Leu	Phe	Thr	Ala	Asp	Asn	His	Thr	Glu	Pro	Ala	Ala	
		275					280					285				
Arg	Phe	Arg	Ala	Thr	Phe	Ala	Ser	His	Val	Gln	Pro	Gly	Gln	Tyr	Val	
	290					295					300					
Leu	Val	Ala	Gly	Val	Pro	Gly	Leu	Gln	Pro	Ala	Arg	Val	Ala	Ala	Val	
305					310					315					320	

a069seq

Ser Thr His Val Ala Leu Gly Ala Tyr Ala Pro Leu Thr Lys His Gly
325 330 335

Thr Leu Val Val Glu Asp Val Val Ala Ser Cys Phe Ala Ala Val Ala
340 345 350

Asp His His Leu Ala Gln Leu Ala Phe Trp Pro Leu Arg Leu Phe His
355 360 365

Ser Leu Ala Trp Gly Ser Trp Thr Pro Gly Glu Gly Val His Trp Tyr
370 375 380

Pro Gln Leu Leu Tyr Arg Leu Gly Arg Leu Leu Leu Glu Glu Gly Ser
385 390 395 400

Phe His Pro Leu Gly Met Ser Gly Ala Gly Ser
405 410

<210> 17

<211> 396

<212> PRT

<213> Homo sapiens

<400> 17

Met Ala Leu Leu Thr Asn Leu Leu Pro Leu Cys Cys Leu Ala Leu Leu
1 5 10 15

Ala Leu Pro Ala Gln Ser Cys Gly Pro Gly Arg Gly Pro Val Gly Arg
20 25 30

Arg Arg Tyr Ala Arg Lys Gln Leu Val Pro Leu Leu Tyr Lys Gln Phe
35 40 45

Val Pro Gly Val Pro Glu Arg Thr Leu Gly Ala Ser Gly Pro Ala Glu
50 55 60

Gly Arg Val Ala Arg Gly Ser Glu Arg Phe Arg Asp Leu Val Pro Asn
65 70 75 80

Tyr Asn Pro Asp Ile Ile Phe Lys Asp Glu Glu Asn Ser Gly Ala Asp
85 90 95

Arg Leu Met Thr Glu Arg Cys Lys Glu Arg Val Asn Ala Leu Ala Ile
100 105 110

Ala Val Met Asn Met Trp Pro Gly Val Arg Leu Arg Val Thr Glu Gly
115 120 125

Trp Asp Glu Asp Gly His His Ala Gln Asp Ser Leu His Tyr Glu Gly
130 135 140

a069seq

Arg	Ala	Leu	Asp	Ile	Thr	Thr	Ser	Asp	Arg	Asp	Arg	Asn	Lys	Tyr	Gly
145					150					155					160
Leu	Leu	Ala	Arg	Leu	Ala	Val	Glu	Ala	Gly	Phe	Asp	Trp	Val	Tyr	Tyr
				165					170					175	
Glu	Ser	Arg	Asn	His	Val	His	Val	Ser	Val	Lys	Ala	Asp	Asn	Ser	Leu
			180					185					190		
Ala	Val	Arg	Ala	Gly	Gly	Cys	Phe	Pro	Gly	Asn	Ala	Thr	Val	Arg	Leu
		195					200					205			
Trp	Ser	Gly	Glu	Arg	Lys	Gly	Leu	Arg	Glu	Leu	His	Arg	Gly	Asp	Trp
	210					215					220				
Val	Leu	Ala	Ala	Asp	Ala	Ser	Gly	Arg	Val	Val	Pro	Thr	Pro	Val	Leu
225					230					235					240
Leu	Phe	Leu	Asp	Arg	Asp	Leu	Gln	Arg	Arg	Ala	Ser	Phe	Val	Ala	Val
				245					250					255	
Glu	Thr	Glu	Trp	Pro	Pro	Arg	Lys	Leu	Leu	Leu	Thr	Pro	Trp	His	Leu
			260					265					270		
Val	Phe	Ala	Ala	Arg	Gly	Pro	Ala	Pro	Ala	Pro	Gly	Asp	Phe	Ala	Pro
		275					280					285			
Val	Phe	Ala	Arg	Arg	Leu	Arg	Ala	Gly	Asp	Ser	Val	Leu	Ala	Pro	Gly
	290					295					300				
Gly	Asp	Ala	Leu	Arg	Pro	Ala	Arg	Val	Ala	Arg	Val	Ala	Arg	Glu	Glu
305					310					315					320
Ala	Val	Gly	Val	Phe	Ala	Pro	Leu	Thr	Ala	His	Gly	Thr	Leu	Leu	Val
				325					330					335	
Asn	Asp	Val	Leu	Ala	Ser	Cys	Tyr	Ala	Val	Leu	Glu	Ser	His	Gln	Trp
			340					345					350		
Ala	His	Arg	Ala	Phe	Ala	Pro	Leu	Arg	Leu	Leu	His	Ala	Leu	Gly	Ala
		355					360					365			
Leu	Leu	Pro	Gly	Gly	Ala	Val	Gln	Pro	Thr	Gly	Met	His	Trp	Tyr	Ser
	370					375					380				
Arg	Leu	Leu	Tyr	Arg	Leu	Ala	Glu	Glu	Leu	Leu	Gly				
385					390						395				

<210> 18

<211> 416

<213> Zebrafish sp.

Met Asp Val Arg Leu His Leu Lys Gln Phe Ala Leu Leu Cys Phe Ile
1 5 10 15

Ser Leu Leu Leu Thr Pro Cys Gly Leu Ala Cys Gly Pro Gly Arg Gly
20 25 30

Tyr Gly Lys Arg Arg His Pro Lys Lys Leu Thr Pro Leu Ala Tyr Lys
35 40 45

Gln Phe Ile Pro Asn Val Ala Glu Lys Thr Leu Gly Ala Ser Gly Lys
50 55 60

Tyr Glu Gly Lys Ile Thr Arg Asn Ser Glu Arg Phe Lys Glu Leu Ile
65 70 75 80

Pro Asn Tyr Asn Pro Asp Ile Ile Phe Lys Asp Glu Glu Asn Thr Asn
85 90 95

Ala Asp Arg Leu Met Thr Lys Arg Cys Lys Asp Lys Leu Asn Ser Leu
100 105 110

Ala Ile Ser Val Met Asn His Trp Pro Gly Val Lys Leu Arg Val Thr
115 120 125

Glu Gly Trp Asp Glu Asp Gly His His Leu Glu Glu Ser Leu His Tyr
130 135 140

Glu Gly Arg Ala Val Asp Ile Thr Thr Ser Asp Arg Asp Lys Ser Lys
145 150 155 160

Tyr Gly Met Leu Ser Arg Leu Ala Val Glu Ala Gly Phe Asp Trp Val
165 170 175

Tyr Tyr Glu Ser Lys Ala His Ile His Cys Ser Val Lys Ala Glu Asn
180 185 190

Ser Val Ala Ala Lys Ser Gly Gly Cys Phe Pro Gly Ser Gly Thr Val
195 200 205

Thr Leu Gly Asp Gly Thr Arg Lys Pro Ile Lys Asp Leu Lys Val Gly
210 215 220

Asp Arg Val Leu Ala Ala Asp Glu Lys Gly Asn Val Leu Ile Ser Asp
225 230 235 240

Phe Ile Met Phe Ile Asp His Asp Pro Thr Thr Arg Arg Gln Phe Ile
245 250 255

a069seq

Val Ile Glu Thr Ser Glu Pro Phe Thr Lys Leu Thr Leu Thr Ala Ala
260 265 270

His Leu Val Phe Val Gly Asn Ser Ser Ala Ala Ser Gly Ile Thr Ala
275 280 285

Thr Phe Ala Ser Asn Val Lys Pro Gly Asp Thr Val Leu Val Trp Glu
290 295 300

Asp Thr Cys Glu Ser Leu Lys Ser Val Thr Val Lys Arg Ile Tyr Thr
305 310 315 320

Glu Glu His Glu Gly Ser Phe Ala Pro Val Thr Ala His Gly Thr Ile
325 330 335

Ile Val Asp Gln Val Leu Ala Ser Cys Tyr Ala Val Ile Glu Asn His
340 345 350

Lys Trp Ala His Trp Ala Phe Ala Pro Val Arg Leu Cys His Lys Leu
355 360 365

Met Thr Trp Leu Phe Pro Ala Arg Glu Ser Asn Val Asn Phe Gln Glu
370 375 380

Asp Gly Ile His Trp Tyr Ser Asn Met Leu Phe His Ile Gly Ser Trp
385 390 395 400

Leu Leu Asp Arg Asp Ser Phe His Pro Leu Gly Ile Leu His Leu Ser
405 410 415

<210> 19
<211> 1416
<212> DNA
<213> Drosophila sp.

<220>
<221> CDS
<222> (1)..(1413)

<400> 19
atg gat aac cac agc tca gtg cct tgg gcc agt gcc gcc agt gtc acc 48

Met Asp Asn His Ser Ser Val Pro Trp Ala Ser Ala Ala Ser Val Thr
1 5 10 15

tgt ctc tcc ctg gga tgc caa atg cca cag ttc cag ttc cag 96

Cys Leu Ser Leu Gly Cys Gln Met Pro Gln Phe Gln Phe Gln Phe Gln
20 25 30

a069seq

ctc	caa	atc	cgc	agc	gag	ctc	cat	ctc	cgc	aag	ccc	gca	aga	aga	acg	144
Leu	Gln	Ile	Arg	Ser	Glu	Leu	His	Leu	Arg	Lys	Pro	Ala	Arg	Arg	Thr	
	35						40					45				
caa	acg	atg	cgc	cac	att	gcg	cat	acg	cag	cgt	tgc	ctc	agc	agg	ctg	192
Gln	Thr	Met	Arg	His	Ile	Ala	His	Thr	Gln	Arg	Cys	Leu	Ser	Arg	Leu	
	50					55					60					
acc	tct	ctg	gtg	gcc	ctg	ctg	ctg	atc	gtc	ttg	ccg	atg	gtc	ttt	agc	240
Thr	Ser	Leu	Val	Ala	Leu	Leu	Leu	Ile	Val	Leu	Pro	Met	Val	Phe	Ser	
65					70					75					80	
ccg	gct	cac	agc	tgc	ggc	cct	ggc	cga	gga	ttg	ggc	cgt	cat	agg	gcg	288
Pro	Ala	His	Ser	Cys	Gly	Pro	Gly	Arg	Gly	Leu	Gly	Arg	His	Arg	Ala	
				85					90					95		
cgc	aac	ctg	tat	ccg	ctg	gtc	ctc	aag	cag	aca	att	ccc	aat	cta	tcc	336
Arg	Asn	Leu	Tyr	Pro	Leu	Val	Leu	Lys	Gln	Thr	Ile	Pro	Asn	Leu	Ser	
			100					105					110			
gag	tac	acg	aac	agc	gcc	tcc	gga	cct	ctg	gag	ggc	gtg	atc	cgt	cgg	384
Glu	Tyr	Thr	Asn	Ser	Ala	Ser	Gly	Pro	Leu	Glu	Gly	Val	Ile	Arg	Arg	
		115					120					125				
gat	tcg	ccc	aaa	ttc	aag	gac	ctc	gtg	ccc	aac	tac	aac	agg	gac	atc	432
Asp	Ser	Pro	Lys	Phe	Lys	Asp	Leu	Val	Pro	Asn	Tyr	Asn	Arg	Asp	Ile	
	130					135					140					
ctt	ttc	cgt	gac	gag	gaa	ggc	acc	gga	gcg	gat	ggc	ttg	atg	agc	aag	480
Leu	Phe	Arg	Asp	Glu	Glu	Gly	Thr	Gly	Ala	Asp	Gly	Leu	Met	Ser	Lys	
145					150					155					160	
cgc	tgc	aag	gag	aag	cta	aac	gtg	ctg	gcc	tac	tcg	gtg	atg	aac	gaa	528
Arg	Cys	Lys	Glu	Lys	Leu	Asn	Val	Leu	Ala	Tyr	Ser	Val	Met	Asn	Glu	
				165					170					175		
tgg	ccc	ggc	atc	cgg	ctg	ctg	gtc	acc	gag	agc	tgg	gac	gag	gac	tac	576
Trp	Pro	Gly	Ile	Arg	Leu	Leu	Val	Thr	Glu	Ser	Trp	Asp	Glu	Asp	Tyr	
			180					185					190			

a069seq

cat	cac	ggc	cag	gag	tcg	ctc	cac	tac	gag	ggc	cga	gcg	gtg	acc	att	624
His	His	Gly	Gln	Glu	Ser	Leu	His	Tyr	Glu	Gly	Arg	Ala	Val	Thr	Ile	
		195					200					205				
gcc	acc	tcc	gat	cgc	gac	cag	tcc	aaa	tac	ggc	atg	ctc	gct	cgc	ctg	672
Ala	Thr	Ser	Asp	Arg	Asp	Gln	Ser	Lys	Tyr	Gly	Met	Leu	Ala	Arg	Leu	
	210					215					220					
gcc	gtc	gag	gct	gga	ttc	gat	tgg	gtc	tcc	tac	gtc	agc	agg	cgc	cac	720
Ala	Val	Glu	Ala	Gly	Phe	Asp	Trp	Val	Ser	Tyr	Val	Ser	Arg	Arg	His	
225					230					235					240	
atc	tac	tgc	tcc	gtc	aag	tca	gat	tcg	tcg	atc	agt	tcc	cac	gtg	cac	768
Ile	Tyr	Cys	Ser	Val	Lys	Ser	Asp	Ser	Ser	Ile	Ser	Ser	His	Val	His	
				245						250				255		
ggc	tgc	ttc	acg	ccg	gag	agc	aca	gcg	ctg	ctg	gag	agt	gga	gtc	cgg	816
Gly	Cys	Phe	Thr	Pro	Glu	Ser	Thr	Ala	Leu	Leu	Glu	Ser	Gly	Val	Arg	
			260					265					270			
aag	ccg	ctc	ggc	gag	ctc	tct	atc	gga	gat	cgt	gtt	ttg	agc	atg	acc	864
Lys	Pro	Leu	Gly	Glu	Leu	Ser	Ile	Gly	Asp	Arg	Val	Leu	Ser	Met	Thr	
		275					280					285				
gcc	aac	gga	cag	gcc	gtc	tac	agc	gaa	gtg	atc	ctc	ttc	atg	gac	cgc	912
Ala	Asn	Gly	Gln	Ala	Val	Tyr	Ser	Glu	Val	Ile	Leu	Phe	Met	Asp	Arg	
	290					295					300					
aac	ctc	gag	cag	atg	caa	aac	ttt	gtg	cag	ctg	cac	acg	gac	ggt	gga	960
Asn	Leu	Glu	Gln	Met	Gln	Asn	Phe	Val	Gln	Leu	His	Thr	Asp	Gly	Gly	
305					310					315				320		
gca	gtg	ctc	acg	gtg	acg	ccg	gct	cac	ctg	gtt	agc	gtt	tgg	cag	ccg	1008
Ala	Val	Leu	Thr	Val	Thr	Pro	Ala	His	Leu	Val	Ser	Val	Trp	Gln	Pro	
				325					330					335		
gag	agc	cag	aag	ctc	acg	ttt	gtg	ttt	gcg	cat	cgc	atc	gag	gag	aag	1056
Glu	Ser	Gln	Lys	Leu	Thr	Phe	Val	Phe	Ala	His	Arg	Ile	Glu	Glu	Lys	
			340					345					350			
aac	cag	gtg	ctc	gta	cgg	gat	gtg	gag	acg	ggc	gag	ctg	agg	ccc	cag	1104

a069seq

Asn	Gln	Val	Leu	Val	Arg	Asp	Val	Glu	Thr	Gly	Glu	Leu	Arg	Pro	Gln		
	355						360					365					
cga	gtg	gtc	aag	ttg	ggc	agt	gtg	cgc	agt	aag	ggc	gtg	gtc	gcg	ccg	1152	
Arg	Val	Val	Lys	Leu	Gly	Ser	Val	Arg	Ser	Lys	Gly	Val	Val	Ala	Pro		
	370					375					380						
ctg	acc	cgc	gag	ggc	acc	att	gtg	gtc	aac	tcg	gtg	gcc	gcc	agt	tgc	1200	
Leu	Thr	Arg	Glu	Gly	Thr	Ile	Val	Val	Asn	Ser	Val	Ala	Ala	Ser	Cys		
385					390					395					400		
tat	gcg	gtg	atc	aac	agt	cag	tcg	ctg	gcc	cac	tgg	gga	ctg	gct	ccc	1248	
Tyr	Ala	Val	Ile	Asn	Ser	Gln	Ser	Leu	Ala	His	Trp	Gly	Leu	Ala	Pro		
				405					410					415			
atg	cgc	ctg	ctg	tcc	acg	ctg	gag	gcg	tgg	ctg	ccc	gcc	aag	gag	cag	1296	
Met	Arg	Leu	Leu	Ser	Thr	Leu	Glu	Ala	Trp	Leu	Pro	Ala	Lys	Glu	Gln		
			420					425					430				
ttg	cac	agt	tcg	ccg	aag	gtg	gtg	agc	tcg	gcg	cag	cag	cag	aat	ggc	1344	
Leu	His	Ser	Ser	Pro	Lys	Val	Val	Ser	Ser	Ala	Gln	Gln	Gln	Asn	Gly		
		435				440						445					
atc	cat	tgg	tat	gcc	aat	gcg	ctc	tac	aag	gtc	aag	gac	tac	gtg	ctg	1392	
Ile	His	Trp	Tyr	Ala	Asn	Ala	Leu	Tyr	Lys	Val	Lys	Asp	Tyr	Val	Leu		
	450					455					460						
ccg	cag	agc	tgg	cgc	cac	gat	tga									1416	
Pro	Gln	Ser	Trp	Arg	His	Asp											
465					470												

<210> 20
 <211> 471
 <212> PRT
 <213> Drosophila sp.

<400> 20
 Met Asp Asn His Ser Ser Val Pro Trp Ala Ser Ala Ala Ser Val Thr
 1 5 10 15
 Cys Leu Ser Leu Gly Cys Gln Met Pro Gln Phe Gln Phe Gln Phe Gln
 20 25 30

1

Leu	Gln	Ile	Arg	Ser	Glu	Leu	His	Leu	Arg	Lys	Pro	Ala	Arg	Arg	Thr
		35					40					45			
Gln	Thr	Met	Arg	His	Ile	Ala	His	Thr	Gln	Arg	Cys	Leu	Ser	Arg	Leu
		50				55					60				
Thr	Ser	Leu	Val	Ala	Leu	Leu	Leu	Ile	Val	Leu	Pro	Met	Val	Phe	Ser
		65			70					75					80
Pro	Ala	His	Ser	Cys	Gly	Pro	Gly	Arg	Gly	Leu	Gly	Arg	His	Arg	Ala
				85					90					95	
Arg	Asn	Leu	Tyr	Pro	Leu	Val	Leu	Lys	Gln	Thr	Ile	Pro	Asn	Leu	Ser
			100					105					110		
Glu	Tyr	Thr	Asn	Ser	Ala	Ser	Gly	Pro	Leu	Glu	Gly	Val	Ile	Arg	Arg
		115					120					125			
Asp	Ser	Pro	Lys	Phe	Lys	Asp	Leu	Val	Pro	Asn	Tyr	Asn	Arg	Asp	Ile
	130					135					140				
Leu	Phe	Arg	Asp	Glu	Glu	Gly	Thr	Gly	Ala	Asp	Gly	Leu	Met	Ser	Lys
145					150					155					160
Arg	Cys	Lys	Glu	Lys	Leu	Asn	Val	Leu	Ala	Tyr	Ser	Val	Met	Asn	Glu
				165					170					175	
Trp	Pro	Gly	Ile	Arg	Leu	Leu	Val	Thr	Glu	Ser	Trp	Asp	Glu	Asp	Tyr
			180					185					190		
His	His	Gly	Gln	Glu	Ser	Leu	His	Tyr	Glu	Gly	Arg	Ala	Val	Thr	Ile
		195					200					205			
Ala	Thr	Ser	Asp	Arg	Asp	Gln	Ser	Lys	Tyr	Gly	Met	Leu	Ala	Arg	Leu
		210				215					220				
Ala	Val	Glu	Ala	Gly	Phe	Asp	Trp	Val	Ser	Tyr	Val	Ser	Arg	Arg	His
225					230					235					240
Ile	Tyr	Cys	Ser	Val	Lys	Ser	Asp	Ser	Ser	Ile	Ser	Ser	His	Val	His
				245					250					255	
Gly	Cys	Phe	Thr	Pro	Glu	Ser	Thr	Ala	Leu	Leu	Glu	Ser	Gly	Val	Arg
			260					265					270		
Lys	Pro	Leu	Gly	Glu	Leu	Ser	Ile	Gly	Asp	Arg	Val	Leu	Ser	Met	Thr
		275					280					285			
Ala	Asn	Gly	Gln	Ala	Val	Tyr	Ser	Glu	Val	Ile	Leu	Phe	Met	Asp	Arg
	290					295					300				

a069seq

Asn	Leu	Glu	Gln	Met	Gln	Asn	Phe	Val	Gln	Leu	His	Thr	Asp	Gly	Gly	
305					310					315					320	
Ala	Val	Leu	Thr	Val	Thr	Pro	Ala	His	Leu	Val	Ser	Val	Trp	Gln	Pro	
				325					330					335		
Glu	Ser	Gln	Lys	Leu	Thr	Phe	Val	Phe	Ala	His	Arg	Ile	Glu	Glu	Lys	
			340					345					350			
Asn	Gln	Val	Leu	Val	Arg	Asp	Val	Glu	Thr	Gly	Glu	Leu	Arg	Pro	Gln	
		355					360					365				
Arg	Val	Val	Lys	Leu	Gly	Ser	Val	Arg	Ser	Lys	Gly	Val	Val	Ala	Pro	
	370					375					380					
Leu	Thr	Arg	Glu	Gly	Thr	Ile	Val	Val	Asn	Ser	Val	Ala	Ala	Ser	Cys	
385					390					395					400	
Tyr	Ala	Val	Ile	Asn	Ser	Gln	Ser	Leu	Ala	His	Trp	Gly	Leu	Ala	Pro	
			405						410					415		
Met	Arg	Leu	Leu	Ser	Thr	Leu	Glu	Ala	Trp	Leu	Pro	Ala	Lys	Glu	Gln	
			420					425					430			
Leu	His	Ser	Ser	Pro	Lys	Val	Val	Ser	Ser	Ala	Gln	Gln	Gln	Asn	Gly	
		435					440					445				
Ile	His	Trp	Tyr	Ala	Asn	Ala	Leu	Tyr	Lys	Val	Lys	Asp	Tyr	Val	Leu	
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Pro	Gln	Ser	Trp	Arg	His	Asp										
465					470											

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<211> 221

<212> PRT

<213> Artificial Sequence

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<223> Arg, His or Lys

a069seq

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<223> Gly, Ala, Val, Leu, Ile, Ser or Thr

<220>
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<223> Gly, Ala, Val, Leu, Ile, Ser or Thr

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<223> Lys, Arg or His

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<223> Ser, Thr, Tyr, Trp or Phe

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<223> Lys, Arg or His

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<223> Met, Cys, Ser or Thr

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<223> Gly, Ala, Val, Leu, Ile, Ser or Thr

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<223> Leu, Val, Met, Thr or Ser

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<223> Phe, Tyr, Thr, His or Trp

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<223> Ile, Val, Leu or Met

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<222> 217

<223> Met, Cys, Ile, Leu, Val, Thr or Ser

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<223> Leu, Val, Met, Thr or Ser

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<223> each Xaa may also be any amino acid.

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Cys Gly Pro Gly Arg Gly Xaa Gly Xaa Arg Arg His Pro Lys Lys Leu

a069seq

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		20						25					30		
Leu	Gly	Ala	Ser	Gly	Arg	Tyr	Glu	Gly	Lys	Ile	Xaa	Arg	Asn	Ser	Glu
		35					40					45			
Arg	Phe	Lys	Glu	Leu	Thr	Pro	Asn	Tyr	Asn	Pro	Asp	Ile	Ile	Phe	Lys
	50					55					60				
Asp	Glu	Glu	Asn	Thr	Gly	Ala	Asp	Arg	Leu	Met	Thr	Gln	Arg	Cys	Lys
65					70					75					80
Asp	Lys	Leu	Asn	Xaa	Leu	Ala	Ile	Ser	Val	Met	Asn	Xaa	Trp	Pro	Gly
			85						90					95	
Val	Xaa	Leu	Arg	Val	Thr	Glu	Gly	Trp	Asp	Glu	Asp	Gly	His	His	Xaa
			100					105					110		
Glu	Glu	Ser	Leu	His	Tyr	Glu	Gly	Arg	Ala	Val	Asp	Ile	Thr	Thr	Ser
		115					120					125			
Asp	Arg	Asp	Xaa	Ser	Lys	Tyr	Gly	Xaa	Leu	Xaa	Arg	Leu	Ala	Val	Glu
	130					135					140				
Ala	Gly	Phe	Asp	Trp	Val	Tyr	Tyr	Glu	Ser	Lys	Ala	His	Ile	His	Cys
145					150					155					160
Ser	Val	Lys	Ala	Glu	Asn	Ser	Val	Ala	Ala	Lys	Ser	Gly	Gly	Cys	Phe
			165						170					175	
Pro	Gly	Ser	Ala	Xaa	Val	Xaa	Leu	Xaa	Xaa	Gly	Gly	Xaa	Lys	Xaa	Val
			180					185					190		
Lys	Asp	Leu	Xaa	Pro	Gly	Asp	Xaa	Val	Leu	Ala	Ala	Asp	Xaa	Xaa	Gly
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Xaa	Leu	Xaa	Xaa	Ser	Asp	Phe	Xaa	Xaa	Phe	Xaa	Asp	Arg			
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<223> Description of Artificial Sequence: degenerate polypeptide sequence

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<223> Arg, His or Lys

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<223> Met, Cys, Gln, Asn, Arg, Lys or His

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<223> Arg, His or Lys

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 Xaa Leu Xaa Pro Leu Xaa Tyr Lys Gln Phe Xaa Pro Xaa Xaa Xaa Glu
 20 25 30
 Xaa Thr Leu Gly Ala Ser Gly Xaa Xaa Glu Gly Xaa Xaa Xaa Arg Xaa
 35 40 45
 Ser Glu Arg Phe Xaa Xaa Leu Thr Pro Asn Tyr Asn Pro Asp Ile Ile
 50 55 60
 Phe Lys Asp Glu Glu Asn Xaa Gly Ala Asp Arg Leu Met Thr Xaa Arg
 65 70 75 80
 Cys Lys Xaa Xaa Xaa Asn Xaa Leu Ala Ile Ser Val Met Asn Xaa Trp
 85 90 95
 Pro Gly Val Xaa Leu Arg Val Thr Glu Gly Xaa Asp Glu Asp Gly His
 100 105 110
 His Xaa Xaa Xaa Ser Leu His Tyr Glu Gly Arg Ala Xaa Asp Ile Thr
 115 120 125

a069seq

Thr	Ser	Asp	Arg	Asp	Xaa	Xaa	Lys	Tyr	Gly	Xaa	Leu	Xaa	Arg	Leu	Ala
130						135					140				
Val	Glu	Ala	Gly	Phe	Asp	Trp	Val	Tyr	Tyr	Glu	Ser	Xaa	Xaa	His	Xaa
145					150					155					160
His	Xaa	Ser	Val	Lys	Xaa	Xaa									
				165											